

CLAIMS

What is claimed is:

1. A non-aqueous electrolyte secondary battery comprising a positive electrode which is configured by applying on a current collector a mixture which comprises:
 - 5 a lithium-containing composite oxide having a hexagonal system structure, wherein Co is substituted for part of nickel atoms in the crystal lattice in a lithium-nickel composite oxide which is represented by a general equation, LiNiO_2 , (provided that the substitution percentage ranges from 5 % to 30 % of the number of nickel atoms in said lithium-nickel composite oxide) and, in addition, at least one element which is selected from a group consisting of Al, Mn, Ti, and Mg is substituted (provided that the substitution percentage is less than 20 % of the number of nickel atoms in said lithium-nickel composite oxide),
 - 10 a binder, and
 - 15 a conductive material;
 wherein said lithium-containing composite oxide is characterized in that a half width of the (110)-plane-based diffraction peak obtained from powder X-ray diffraction method, in which $\text{CuK}\alpha$ line is used as characteristic X-ray, is larger than 0.13° and smaller than 0.20° and that the ratio of the (003)-plane-based diffraction peak intensity to the (104)-plane-based diffraction peak intensity is larger than 1.2 and smaller than 1.8.
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 2. The non-aqueous electrolyte secondary battery according to claim 1, wherein said lithium-containing composite oxide is represented by the general equation, $\text{Li}_w\text{Ni}_x\text{Co}_y\text{M}_z\text{O}_2$, (provided that M is at least one element which is selected from Al, Mn, Ti, or Mg, $0 < w \leq 1.2$, $0.95 \leq x+y+z \leq 1.05$, $0.5 \leq x \leq 0.9$, $0.05 \leq y \leq 0.3$, and $0 < z \leq 0.2$.)
 - 35
 3. The non-aqueous electrolyte secondary battery according to claim 1, wherein said lithium-containing composite oxide is represented by the general equation, $\text{Li}_w\text{Ni}_x\text{Co}_y\text{Al}_z\text{O}_2$, (provided that $0 < w \leq 1.2$, $0.95 \leq x+y+z \leq 1.05$, $0.7 \leq x \leq 0.85$, $0.1 \leq y \leq 0.2$, and $0.01 < z \leq 0.1$.)